

CLAIMS

1. A wafer polishing process comprising:  
polishing a surface of a wafer in the presence of an oxidizer-free  
medium; and, subsequently,  
polishing the surface of the wafer in the presence of an oxidizing  
medium.
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2. The wafer polishing process of claim 1, wherein said oxidizer-  
free medium comprises an oxidizer-free slurry, and said oxidizing medium  
comprises an oxidizing slurry.
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3. The wafer polishing process of claim 1, wherein said oxidizer-  
free medium comprises an oxidizer-free fluid, and said oxidizing medium  
comprises an oxidizing fluid.
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4. The wafer polishing process of claim 1, wherein said polishing in  
the presence of an oxidizer-free medium and said polishing in the presence of  
an oxidizing medium both occur at a first polishing station.
5. The wafer polishing process of claim 4, further comprising,  
transferring said wafer from said first polishing station to a  
second polishing station; and  
polishing said surface of said wafer in the presence of an  
oxidizing medium at said second polishing station.
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6. The wafer polishing process of claim 1, wherein said polishing in  
the presence of an oxidizer-free medium occurs at a first polishing station and  
said polishing in the presence of an oxidizing medium occurs at a second  
polishing station.
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7. The wafer polishing process of claim 1, wherein said polishing in  
the presence of an oxidizer-free medium and said polishing in the presence of  
an oxidizing medium both comprise linear chemical-mechanical polishing.

8. The wafer polishing process of claim 1, wherein said surface comprises a copper-containing component.
9. The process of claim 8, wherein said oxidizing medium comprises at least one oxidizer capable of oxidizing at least a portion of said copper-containing component.
- 5 10. A wafer polishing process comprising:  
supplying an oxidizer-free medium to a polishing portion of a polishing station;  
polishing a surface of a wafer in the presence of said oxidizer-free medium at said polishing station;  
discontinuing the supply of said oxidizer-free medium to the polishing portion;  
supplying an oxidizing medium to the polishing portion; and  
polishing the surface of the wafer in the presence of said oxidizing medium at said polishing portion.
11. The wafer polishing process of claim 10, wherein said surface comprises a copper-containing component.
- 20 12. The wafer polishing process of claim 10, wherein said oxidizer-free medium comprises an oxidizer-free slurry, and said oxidizing medium comprises an oxidizing slurry.
13. The wafer polishing process of claim 10, wherein said oxidizer-free medium comprises an oxidizer-free fluid, and said oxidizing medium comprises an oxidizing fluid.
- 25 14. A wafer polishing process comprising:  
chemically-mechanically polishing a copper-containing surface of a wafer in the presence of an oxidizer-free slurry at a first polishing station;  
transferring the wafer from said first polishing station to a second polishing station; and

chemically-mechanically polishing the copper-containing surface of the wafer in the presence of an oxidizing slurry at said second polishing station.

- 5            15. A wafer polishing system comprising:  
a first chemical-mechanical polishing station having a polishing portion;  
a source of an oxidizer-free medium in communication with said polishing portion; and  
a source of an oxidizing medium in communication with said polishing portion.
- 10            16. The wafer polishing system of claim 15, further comprising:  
a second polishing station; and  
a transfer mechanism adapted to move said wafer from said first polishing station to said second polishing station.
- 15            17. A wafer polishing system comprising:  
a first polishing station adapted to polish a surface of a wafer in the presence of an oxidizer-free medium;  
a source of an oxidizer-free medium in communication with said first polishing station;  
a second polishing station adapted to polish said surface of said wafer in the presence of an oxidizing medium;  
a source of an oxidizing slurry in communication with said second polishing station; and  
a transfer mechanism adapted to move a wafer from said first polishing station to said second polishing station.
- 20            18. The wafer polishing system of claim 17, wherein said source of oxidizing solution is also in communication with said first polishing station.
- 25            19. The wafer polishing system of claim 17, further comprising:

a second source of an oxidizing medium in communication with said first polishing station.

20. The wafer polishing station of claim 17, wherein said oxidizer-free medium comprises an oxidizer-free slurry, and said oxidizing medium comprises an oxidizing slurry.